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ANDERLIK et al.

PF 0000049256

- 1) **Caupin et al.** incorporates the instant odorant oils of pheromones into the instant thermoplastic elastomeric polyesters, including amide & block copolymers
- 2) **Kubaneck et al.** impregnates similar plastics to provide stability, with examples showing further mixing with a second polymer
- 3) **Guntherberg et al.** discloses the instant Tg first polymers

and read in combination, render the currently claimed invention obvious.

According to §103, in order to establish a prima facie case of obviousness, there must be (1) some suggestion or motivation to modify the references, (2) reasonable expectation of success and (3) the prior art reference must teach or suggest all of the claim limitations.¹ In the case at hand, the Examiner has not established a prima facie case because the cited references do not teach or suggest all of the claim limitations.

First, the currently claimed invention requires mixing a first polymer material with an odorant, allowing the first polymer material to absorb the odorant in the polymer's network and thereby swell the first polymer material, and wherein the first polymer material is non-macroporous. Furthermore, as stated in the application, the swelling is the absorption of the odorant into the polymer matrix or, respectively, the polymer network of the first polymer.² As a result, the polymer particles will be genuinely loaded with the odorant.³

On the other hand, **Kubaneck et al.** does not disclose that an odorant is absorbed into a first polymer's network, thereby swelling the first polymer materials.⁴ **Kubaneck et al.** in fact discloses that a scenting material is sorbed on to a pulverious porous carrier material, wherein the carrier material has a large specific surface ranging from 34 m²/g to 560 m²/g.⁵ As stated in **Kubaneck et al.**, page 1, lines 124-129, "Due to the large surface of the mentioned carrier types of scenting materials and their porous structure, they can act as active filler agents in plastics and can easily be coloured with colours similar to those used for other plastics." This porosity of the

¹ See MPEP §2143

² Application, page 2, lines 23-25.

³ Application, page 2, lines 21-22.

⁴ This was also discussed in the reply to the office action of September 30, 2003 dated March 1, 2004.

⁵ **Anderlik et al.**, column 2, lines 83-84; Examples 1-5

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carrier material in **KubaneK et al.** means that the odorant is adsorbed in the pores of the carrier, rather than absorbed.⁶ Therefore the **KubaneK et al.** reference does not disclose a non-macroporous first polymer, where the odorant is absorbed into the polymer's network.

The **KubaneK et al.** reference also does not disclose a carrier which is selected from particulate cross-linked plastics as is required by the current claims. **KubaneK et al.** discloses that the carrier materials can be organic, polymer materials or inorganic materials such as hydrated oxide of silicon, titanium, aluminium and bentonate.⁷ In particular, and unlike the presently claimed invention, the polymeric materials described by **KubaneK et al.** are thermoplastic polymer materials, and not cross-linked polymer materials. The examples in **KubaneK et al.** utilize thermoplastics or thermoplastically processable materials or powdery porous silicon oxide as carrier material, and polybutyl methacrylate as a thickener.

Furthermore, as was discussed on page 2 of the reply of June 10, 2005, there is a significant and fundamental distinction between thermoplastic materials, which are not cross-linked, and thermoset materials which are cross-linked.⁸ Thermoplastics are capable of being thermally processed, while thermoset materials cannot be processed and are more resistant to softening in the presence of heat.

Therefore, because the currently claimed invention employs cross-linked polymer networks, the odorant-laden first polymer material does not melt when being mixed with the second polymer material and when further processed under heat and pressure in an extruder or kneader. As a result, the odorant is much better retained by the polymer carrier material than it is in the thermoplastic polymer materials, which melt upon heating, and odorant plastics having a long-lasting odor are obtained. Therefore, the **KubaneK et al.** reference does not disclose a polymer material that is absorbed into the polymer's network and thereby swells the first polymer material, nor does it disclose a polymer material that is non-macroporous and is selected from particulate cross-linked plastics which have rubber properties. For this reason all the limitations of the current claims are not disclosed and accordingly the applicant respectfully requests that the §103(a) rejection be withdrawn. Furthermore, for the above reasons, **KubaneK**

⁶ Application, page 2, lines 4-8.

⁷ **KubaneK et al.**, page 1, lines 96-102.

⁸ A copy of page 4 of Fried's "Polymer Science and Technology" was enclosed with the reply for explanation.

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et al. does not identically disclose the currently claimed invention, and applicant respectfully requests the §102(b) rejection be withdrawn.

Additionally, the **Caupin et al.** reference is even further distanced away from the claims of the current invention than the **Kubaneck et al.** reference. **Caupin et al.** is directed toward a composition comprising a thermoplastic elastomer, a chemical mediator and an undecylenic acid component. As can be seen from reviewing the reference, first, **Caupin et al.** does not teach to impregnate a first polymer material with an odorant and to subsequently mix the swollen first polymer material with the second polymer material. Secondly, the polymer materials employed by **Caupin et al.** are not particulate cross-linked plastics having rubber properties as is required by the current claims. Instead, **Caupin et al.** employs thermoplastic elastomers having polyether units.⁹ The thermoplastic elastomers may be thermoplastic, elastomeric polyesters comprising polyether blocks and polyester blocks, or may be copolyetherimide esters, or may be thermoplastic elastomers comprising polyether units and amide units.¹⁰ Therefore, no cross-linked polymer materials are disclosed.

Additionally, the **Guntherberg et al.** reference does nothing to close the gap between **Caupin et al.** and **Kubaneck et al.** **Guntherberg et al.** merely shows that particulate rubbers such as ABS-rubbers, component A, can be mixed with thermoplastic polymers, component B.

As the foregoing remarks indicate, neither **Kubaneck et al.**, **Caupin et al.**, nor **Guntherberg et al.**, either alone or in combination, disclose a process where an odorant is absorbed into a polymer network thereby swelling the first polymer material, and where the polymer material is non-macroporous and is selected from particulate cross-linked plastics which have rubber properties.

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⁹ **Caupin et al.**, column 2, line 51 to column 3 line 64.

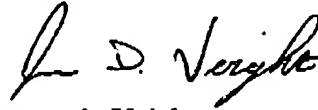
¹⁰ **Caupin et al.** column 2, lines 58-59; column 3, lines 29-32; column 4 lines 53-55.

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